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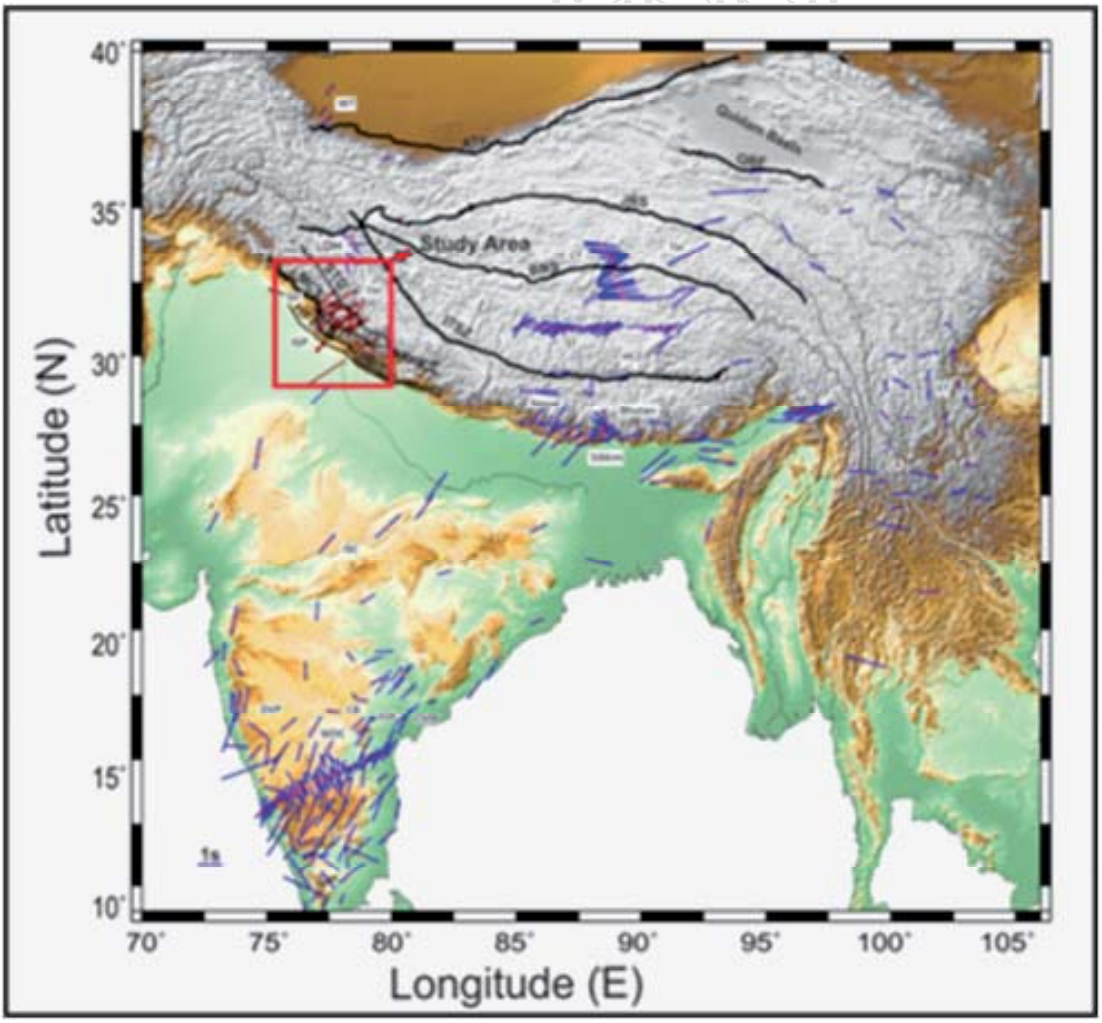
1 Non-uniformity of Himalayas

CONTEXT:

- Non-uniformity of Himalayas foresees significantly large earthquake events.

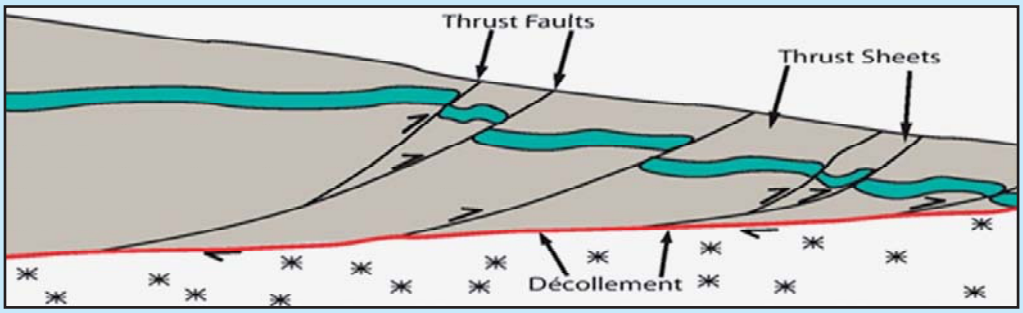
Key-highlights of the findings

- Scientists have found that the Himalayas are not uniform and assume different physical and mechanical properties in different directions – a property present in crystals called **anisotropy** which could result in significantly large earthquake events in the Himalayas.
- The joint study using seismic waves from 167 earthquakes recorded by 20 broadband seismic stations deployed in the Western Himalaya suggested that the major contribution of the anisotropy is mainly because the strain induced by the **Indo-Eurasia collision** (going on since 50 million years) and deformation due to the collision is found to be larger in the crust than in the upper mantle.
- The inhomogeneity along the Himalayas influences the stressing rate is because of variation in the geometry of **the Main Himalayan Thrust (MHT) system**, and it controls the rupture size during the earthquake.
- This lack of homogenous physical and mechanical properties of the Himalayas could help explore new perspectives about deformations taking place at the Himalaya-Tibet crustal belt involved in the formation of the Himalayan Mountains.



Main Himalayan Thrust (MHT):

- The Main Himalayan Thrust (MHT) is a décollement under the Himalaya Range.
- This thrust fault follows a NW-SE strike, reminiscent of an arc, and gently dip towards the north, beneath the region. It is the largest active continental megathrust fault in the world.



Earthquakes in NW region of India

- The NW region of India, an area covering Garhwal and Himachal Pradesh, has been hit by four destructive moderate to great earthquakes since the beginning of the 20th century –
  - the Kangra earthquake of 1905
  - the Kinnaur earthquake of 1975
  - the Uttarkashi earthquake of 1991
  - the Chamoli earthquake of 1999
- These seismic activities manifest large-scale subsurface deformation and weak zones, underlining the need for deeper insights into the ongoing deformation beneath these tectonically unstable zones.

2 e-Courts Project

CONTEXT:

- In another major initiative, the eCommittee Supreme Court has prepared the draft vision document for Phase III of the eCourts Project under the auspices of the Supreme Court of India.

What is e-Courts Project?

- E-Courts Project is a mission mode project undertaken by the Department of Justice, Government of India.
- The eCommittee Supreme Court of India released the Draft Vision document for Phase III of the aforementioned e-Courts Project.
- A solid foundation for the objectives of the eCommittee has been substantially achieved in the first two phases of the Project. The objectives of the eCommittee include:
- Interlinking of all courts across the country; ICT enablement of the Indian judicial system; Enabling courts to enhance judicial productivity, both qualitatively and quantitatively; Making the justice delivery system accessible, cost-effective, transparent and accountable; and Providing citizen-centric services.

What is Phase-III of the e-court Project?

- As Phase-II will soon conclude, the Committee initiated steps for preparing a vision document for Phase-III.
- Phase III of the eCourts Project in India is rooted in two central facets—access and inclusion.
- Phase III of the eCourts Project envisions a judicial system that is more easily accessible irrespective of geographical distances, efficient and equitable for every individual who seeks justice, makes more efficient use of human and other resources, and absorbs the latest technology for a positive environmental impact.
- **This vision for Phase III is sought to be built on the following four building blocks:**
- **Core Values:** Phase III must strive for a modern judicial system, governed by core values of trust, empathy, sustainability and transparency which, while simplifying procedures, will maximise the positives of technology and minimise its risks and challenges.
- **Whole-of-system approach**: Phase III must aim to make processes more efficient across all three components of dispute management i.e. dispute avoidance, containment and resolution. Each of these components will require technological integration with different institutions.
- **Adoption frameworks:** Phase III must focus on building strong adoption frameworks. Such frameworks must include behavioural nudges, adequate training and skill set development, feedback loops, along with the requisite mandate of law.
- **Governance framework**: From a governance perspective, while numerous judicial decisions have validated the use of technology in judicial processes, Phase III must address the accompanying administrative structures.
- The key goals and strategy of Phase III prioritise the creation of a core digital infrastructure that can enable the development of services for dispute resolution by the judiciary and services of solutions for dispute containment and resolution by the ecosystem.

e-Courts:

- The e-Courts project was conceptualized on the basis of the National Policy and Action Plan for Implementation of information and communication technology (ICT) in the Indian Judiciary–2005 submitted by e-Committee (Supreme Court of India), with a vision to transform the Indian Judiciary by ICT enablement of Courts.
- In other words, e-Court project is all about providing ICT enablement of courts to make justice delivery system affordable and cost-effective.
- The objective of the e-Courts project is to provide designated services to litigants, lawyers and the judiciary by universal computerization of district and subordinate courts in the country and enhancement of ICT enablement of the justice system.

3 SHANTIR OGROSHENA 2021 (Front Runner of the Peace)

CONTEXT:

- Multinational Military **Exercise SHANTIR OGROSHENA 2021** (**Front Runner of the Peace**) was held at Bangladesh to commemorate the birth centenary of **Bangladesh 'Father of the Nation' Bangabandhu Sheikh Mujibur Rahman** and mark glorious 50 years of liberation.

What is Exercise SHANTIR OGROSHENA 2021?

- Indian Army contingent comprising of 30 personnel including Officers, JCOs and Jawans of a Battalion from The DOGRA regiment participated in the exercise along with contingent of Royal Bhutan Army, Sri Lankan Army and Bangladesh Army.
- The theme of the exercise was "Robust Peace Keeping Operations".
- Military observers from USA, UK, Turkey, Kingdom of Saudi Arabia, Kuwait and Singapore were also present throughout the exercise.
- The aim of the exercise is to strengthen the procedures and enhance interoperability amongst neighbourhood countries to ensure robust peace keeping operations in the region.

4 Second Virtual G20 meeting

CONTEXT:

- Recently, Finance Minister attended Second Virtual G20 Finance Ministers and Central Bank Governors Meeting.

ABOUT:

- The G20 Finance Ministers and Central Bank Governors discussed Updates of the G20 Action Plan in response to COVID-19.
- They also discussed supporting the financing needs of the most vulnerable economies, the progress on the international taxation agenda, promoting greener transitions and the pandemic related financial regulation issues.
- Smt. Sitharaman urged all G20 members to ensure equitable access and widespread distribution of vaccines.
- The Finance Minister shared that India is running an ambitious programme of rapid domestic vaccination and has emerged as a key global producer of vaccines and medical products, especially during the pandemic.
- The Finance Minister urged the G20 High Level Independent Panel on Financing the Global Commons for Pandemic Preparedness and Response to draw upon such country experiences.
- Noting the discourse in the G20 on climate change, Smt. Sitharaman emphasised on the need for progress on commitments made under the Paris Agreement on climate finance and technology transfer.
- For boosting support to the most vulnerable economies, the Finance Minister supported extending the **Debt Service Suspension Initiative**, by six months, till December 2021.

G20:

- The G20 (or Group of Twenty) is an international forum for the governments and central bank governors from 19 countries and the European Union (EU).
- Founded in 1999 with the aim to discuss policy pertaining to the promotion of international financial stability, the G20 has expanded its agenda since 2008 and heads of government or heads of state, as well as finance ministers, foreign ministers and think tanks, have periodically conferred at summits ever since.
- It seeks to address issues that go beyond the responsibilities of any single nation.

5 Raisina Dialogue-2021

CONTEXT:

- Recently, Prime Minister delivered a video address at the Session of the Raisina Dialogue in virtual format.

ABOUT:

- The 6th Edition of the prestigious Raisina Dialogue, jointly organised by the Ministry of External Affairs and the Observer Research Foundation,was be held virtually.
- Prime Minister Modi observed that the current edition of the Raisina Dialogue was taking place at a watershed moment in human history in the backdrop of COVID-19 pandemic which has been ravaging the world for more than a year.
- The Prime Minister called upon the global community to introspect on some pertinent questions in the present context.

The Raisina Dialogue:

- The Raisina Dialogue is a multilateral conference held annually in New Delhi, India. Since its inception in 2016, the conference has emerged as India's flagship conference on geopolitics and geo-economics. The conference is hosted by the Observer Research Foundation, an independent think tank, in collaboration with the Ministry of External Affairs of India.
- The conference is structured as a multi-stakeholder, cross-sectoral discussion, involving a variety of global policymakers including heads of state, cabinet ministers and local government officials.
- In addition, the Dialogue also welcomes major private sector executives, as well as members of the media and academia. It is designed on the lines of Singapore's Shangri-La Dialogue.
- The name "Raisina Dialogue" comes from Raisina Hill, an elevation in New Delhi, seat of the Government of India, as well as the Presidential Palace of India, Rashtrapati Bhavan.

6 Production Linked Incentive (PLI) Scheme for White Goods

CONTEXT:

- Union Cabinet approves Production Linked Incentive (PLI) Scheme for White Goods (Air Conditioners and LED Lights)

ABOUT:

- Taking another important step towards the vision of 'Atmanirbhar Bharat', the Union Cabinet, chaired by the Prime Minister, approved the Production Linked Incentive (PLI) Scheme for White Goods (Air Conditioners and LED Lights) .
- **The prime objective** of the PLI scheme is to make manufacturing in India globally competitive by removing sectoral disabilities, creating economies of scale and ensuring efficiencies.
- It is designed to create complete component ecosystem in India and make India an integral part of the global supply chains.

- The scheme is expected to attract global investments, generate large scale employment opportunities and enhance exports substantially.
- The PLI Scheme for White Goods shall extend an incentive of 4% to 6% on incremental sales of goods manufactured in India for a period of five years to companies engaged in manufacturing of Air Conditioners and LED Lights.
- Different segments have been earmarked for different types of components separately to specifically target global investments into desired areas.
- The Scheme will be implemented as a pan India scheme and is not specific to any location, area or segment of population. A number of global and domestic companies, including a number of MSMEs are likely to benefit from the Scheme.
- The Scheme is expected to be instrumental in achieving growth rates that are much higher than existing ones for AC and LED industries, develop complete component eco-systems in India and create global champions manufacturing in India.
- They will have to meet the compulsory BIS and BEE Quality standards for sales into domestic market and applicable standards for global markets. It will also lead to investments in innovation and research and development and upgradation of technology.

Atmanirbhar Bharat:

- Atmanirbhar Bharat which translates to 'self-reliant India', is a Hindi phrase used and popularized by the Prime Minister of India Narendra Modi and the Government of India in relation to economic development in the country during and after the COVID-19 pandemic.
- In this context, the term is used as an umbrella concept in relation to making India "a bigger and more important part of the global economy", pursuing policies that are efficient, competitive and resilient, and being self-sustaining and self-generating.

7 All India Surveys by the Government of India

CONTEXT:

- The Labour Bureau has recently been tasked with five major All India Surveys by the Government of India.

ABOUT:

- The five surveys are the
  - All-India Survey of Migrant Workers
  - All-India Survey on Domestic Workers
  - All-India Survey on Employment generated in Transport Sector
  - All-India Survey of Employment Generated by Professionals
  - All-India Quarterly Establishment based Employment Survey (AQEES)
- The five surveys have been worked upon simultaneously and will be launched in a phased manner keeping in mind the constraints arising from pandemic.
- The first surveys to be launched are the All-India Survey of Migrant Workers and All-India Quarterly Establishment based Employment Survey (AQEES).
- In another first these surveys will be conducted in major regional languages.

Objective of these surveys:

- **All-India Survey of Migrant Workers** – To study the kind of employment related migration undertaken by workers, the details of working and living conditions faced by them and impact of COVID 19 on their world of work.
- **All-India Quarterly Establishment based Employment Survey (AQEES)** – The survey would provide the employment estimates for establishments employing 10 or more workers as well as those with employing 9 or less workers. This highly useful establishment based survey will provide crucial data on the changes in employment situation across the selected sectors on a quarterly basis.
- **All-India Survey on Domestic Workers** – The survey will be instrumental in estimating the number of domestic workers in the country for the first time ever. Some additional specific objectives are to collect data on incidence and characteristics of households with domestic workers and the average number of domestic workers engaged by different types of households.
- **All-India Survey on Employment generated in Transport Sector** – Estimates for employment generated in the transportation sector in the country will be generated using this survey.
- **All-India Survey of Employment Generated by Professionals** – The survey will help in the estimation of employment generated by professions such as lawyers, medical professionals, cost accountants and chartered accountants.

Labour Bureau

- Labour Bureau is responsible for collation, collection and publication of statistics and related information on wages, earnings, productivity, absenteeism, labour turn-over, industrial relations, working and living conditions, employment and unemployment and evaluation of working of various labour enactments etc.
- It is a storehouse of important economic indicators like
  - Consumer Price Index Numbers for Industrial, Agricultural and Rural Labourers;
  - Wage rate indices and data on industrial relations, socio-economic conditions in the organised and unorganised sector of industry etc.

8 FDI inflows in the country

CONTEXT:

- India Attracts total FDI inflow of US$ 72.12 billion during April, 2020 to January, 2021.

ABOUT:

- The Measures taken by the Government on the fronts of FDI policy reforms, investment facilitation and ease of doing business have resulted in increased FDI inflows into the country as India has attracted total FDI inflow of US$ 72.12 billion during April to January, 2021.
- It is the highest ever for the first ten months of a financial year and 15% higher as compared to the first ten months of 2019-20 (US$ 62.72 billion).
- In terms of top investor countries, 'Singapore' is at the apex with 30.28% of the total FDI Equity inflow followed by U.S.A (24.28%) and UAE (7.31%) for the first ten months of the current financial year 2020-21.

- Japan has been leading the list of investor countries to invest in India with 29.09% of the total FDI Equity inflows during January, 2021, followed by Singapore (25.46%) and the U.S.A. (12.06%).
- The Computer Software & Hardware has emerged as the top sector during the first ten months of F.Y. 2020-21 with 45.81% of the total FDI Equity inflow followed by Construction (Infrastructure) Activities (13.37%) and Services Sector (7.80%) respectively.
- As per the trends shown during the month of January, 2021, the consultancy services emerged as the top sector with 21.80% of the total FDI Equity inflow followed by Computer Software & Hardware (15.96%) and Service Sector (13.64%).
- These trends in India's Foreign Direct Investment are an endorsement of its status as a preferred investment destination amongst global investors.

Foreign Direct Investment (FDI):

- A foreign direct investment (FDI) is an investment made by a firm or individual in one country into business interests located in another country.
- Generally, FDI takes place when an investor establishes foreign business operations or acquires foreign business assets in a foreign company.
- However, FDIs are distinguished from portfolio investments in which an investor merely purchases equities of foreign-based companies.

9 Insolvency and Bankruptcy Code (Amendment) Ordinance, 2021

CONTEXT:

- Recently, the President promulgated the Insolvency and Bankruptcy Code (Amendment) Ordinance, 2021.

ABOUT:

- The amendments aims to provide an efficient alternative insolvency resolution framework for corporate persons classified as micro, small and medium enterprises (MSMEs) under the Code, for ensuring quicker, cost-effective and value maximising outcomes for all the stakeholders, in a manner which is least disruptive to the continuity of MSMEs businesses and which preserves jobs.
- The initiative is based on a trust model and the amendments honour the honest MSME owners by trying to ensure that the resolution happens and the company remains with them.

Expected benefits

- It is expected that the incorporation of Pre-Packaged insolvency resolution process for MSMEs in the Code will alleviate the distress faced by MSMEs due to the impact of the pandemic & the unique nature of their business, duly recognizing their importance in the economy.
- It provides an efficient alternative insolvency resolution framework for corporate persons classified as MSMEs for timely, efficient & cost-effective resolution of distress thereby ensuring positive signal to debt market, employment preservation, ease of doing business and preservation of enterprise capital.
- Other expected impact and benefits of the amendment in Code are
  - lesser burden on Adjudicating Authority

- assured continuity of business operations for corporate debtor (CD)
- less process costs & maximum assets realization for financial creditors (FC) and assurance of continued business relation with CD
- rights protection for operational Creditors (OC)

Sections proposed to be amended

- The Amendment Ordinance seeks to amend sections such as 4, 5, 11, 33, 34, 61, 65, 77, 208, 239, 240 & insert new sections such as 11A, 67A, 77A and a new chapter as IIIA on Pre-Packaged insolvency resolution process for MSMEs in the Code based on recommendations made by the Insolvency Law Committee (ILC).

The Insolvency and Bankruptcy Code, 2016 (IBC):

- The Insolvency and Bankruptcy Code, 2016 (IBC) is the bankruptcy law of India which seeks to consolidate the existing framework by creating a single law for insolvency and bankruptcy.
- The Insolvency and Bankruptcy Code, 2015 was introduced in Lok Sabha in December 2015. It was passed by Lok Sabha on 5 May 2016 and by Rajya Sabha on 11 May 2016.
- The Code received the assent of the President of India on 28 May 2016. Certain provisions of the Act have come into force from 5 August and 19 August 2016.
- The bankruptcy code is a one stop solution for resolving insolvencies which previously was a long process that did not offer an economically viable arrangement.
- The code aims to protect the interests of small investors and make the process of doing business less cumbersome.

10 The Hydrogen Economy – New Delhi Dialogue 2021

CONTEXT:

- The Energy Forum (TEF) and the Federation of Indian Petroleum Industry (FIPI), under the aegis of Ministry of Petroleum and Natural Gas, Government of India, have organised a Hydrogen Roundtable titled "Hydrogen Economy- the Indian Dialogue-2021.

ABOUT:

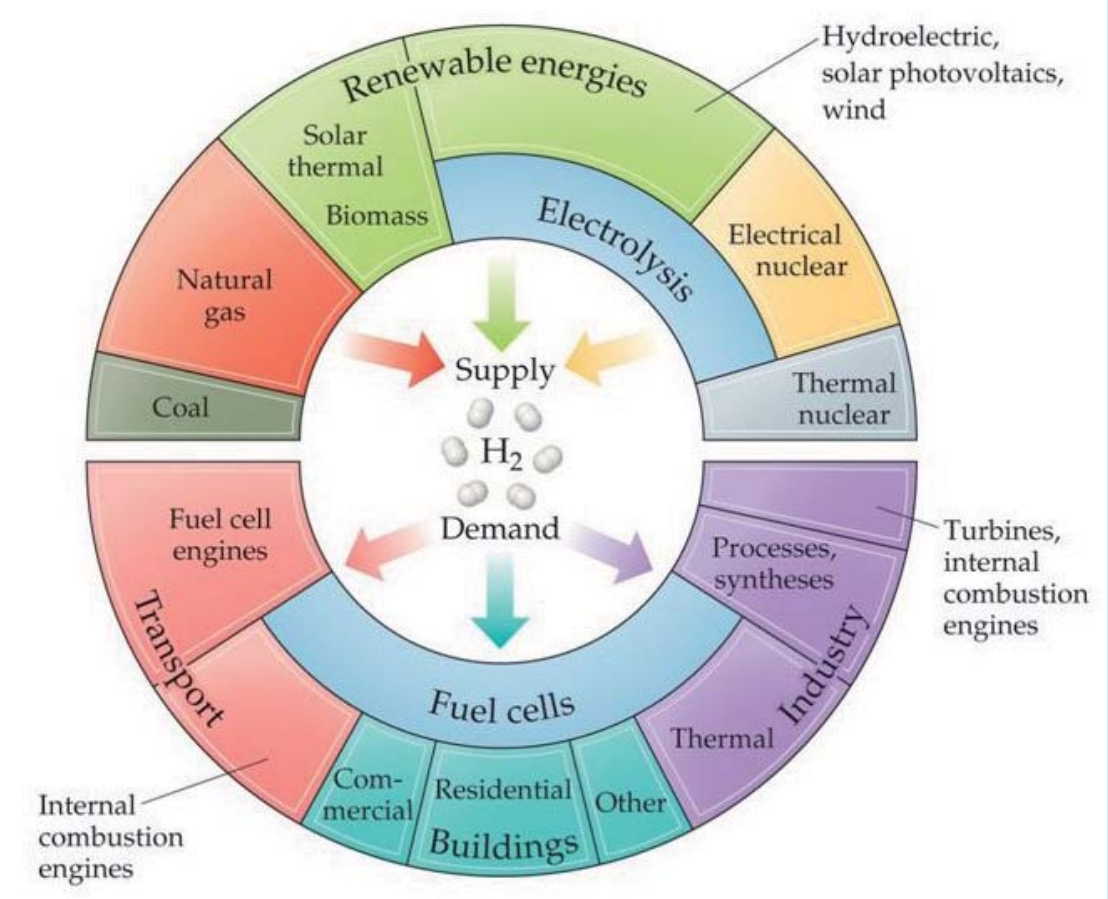
- As the world chases its international climate commitments and takes steps to counter climate change, Hydrogen is gaining increasing importance as a source to bridge energy gaps and also as a standalone source to conventional fuels.
- The Hydrogen Roundtable, the first of its kind, comprised a High-level Ministerial Session, followed by five Panel Discussions by eminent policy makers, experts and industry leaders from different geographical regions of the world, with focus on policy roadmaps and mapping demand and supply of Hydrogen.

Hydrogen economy:

- The term "hydrogen economy" refers to the vision of using hydrogen as a low-carbon energy source – replacing, for example, gasoline as a transport fuel or natural gas as a heating fuel.

- Hydrogen is attractive because whether it is burned to produce heat or reacted with air in a fuel cell to produce electricity, the only byproduct is water.
- Hydrogen is not found in pure form on Earth, however, so it must be produced from other compounds such as natural gas, biomass, alcohols or water.
- In all cases it takes energy to convert these into pure hydrogen. For that reason, hydrogen is really an energy carrier or storage medium rather than an energy source in itself – and the climate change impact of using it depends on the carbon footprint of the energy used to produce it.

The Hydrogen Economy



11 Copyright (Amendment) Rules, 2021

CONTEXT:

- The Government of India has notified Copyright (Amendment) Rules, 2021.

ABOUT:

- In India, the copyright regime is governed by the Copyright Act, 1957 and the Copyright Rules, 2013.

- The Copyright Rules, 2013 were last amended in the year 2016.
- The amendments have been introduced with the objective of bringing the existing rules in parity with other relevant legislations.
- It aims to ensure smooth and flawless compliance in the light of the technological advancement in digital era by adopting electronic means as primary mode of communication and working in the Copyright Office.

What are the new provisions?

- A new provision regarding publication of a copyrights journal has been incorporated, thereby eliminating the requirement of publication in the Official Gazette.
- In order to encourage accountability and transparency, new provisions have been introduced, to deal with the undistributed royalty amounts and use of electronic and traceable payment methods while collection and distribution of royalties.
- To reinforce transparency in working of copyright societies a new rule has been introduced, whereby the copyright societies will be required to draw up and make public an Annual Transparency Report for each financial year.
- The amendments have harmonised the Copyright Rules with the provisions of Finance Act, 2017 whereby the Copyright Board has been merged with Appellate Board.

Intellectual property (IP):

- Intellectual property (IP) is a category of property that includes intangible creations of the human intellect. There are many types of intellectual property, and some countries recognize more than others. The most well-known types are copyrights, patents, trademarks, and trade secrets.
- **Copyright**: Copyright is a type of intellectual property that gives its owner the exclusive right to make copies of a creative work, usually for a limited time. The creative work may be in a literary, artistic, educational, or musical form. Copyright is intended to protect the original expression of an idea in the form of a creative work, but not the idea itself
- **Patent**: A patent is a title that gives its owner the legal right to exclude others from making, using, or selling an invention for a limited period of years in exchange for publishing an enabling public disclosure of the invention. In most countries, patent rights fall under private law and the patent holder must sue someone infringing the patent in order to enforce his or her rights.
- **Trademark**: A trademark is a type of intellectual property consisting of a recognizable sign, design, or expression which identifies products or services of a particular source from those of others, although trademarks used to identify services are usually called service marks. The trademark owner can be an individual, business organization, or any legal entity. A trademark may be located on a package, a label, a voucher, or on the product itself. For the sake of corporate identity, trademarks are often displayed on company buildings. It is legally recognized as a type of intellectual property.
- **Trade secrets** : Trade secrets are a type of intellectual property that comprise formulas, practices, processes, designs, instruments, patterns, or compilations of information that have inherent economic value because they are not generally known or readily ascertainable by others, and which the owner takes reasonable measures to keep secret. In some jurisdictions, such secrets are referred to as confidential information.

12 Gamma-ray Emitting Galaxy

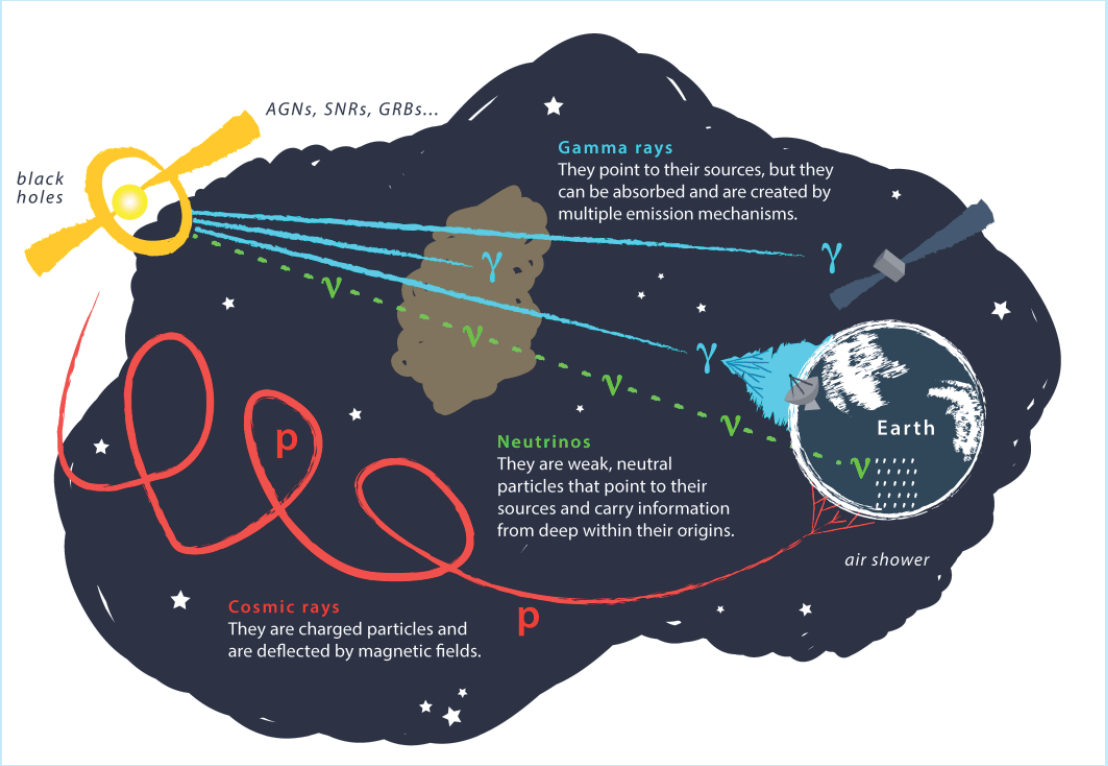
CONTEXT:

- Scientists discover the farthest Gamma-ray emitting active galaxy with narrow emission lines.

ABOUT:

- This active galaxy called the Narrow-Line Seyfert 1 (NLS1) galaxy, which is about 31 billion light-years away, opens up avenues to explore more such gamma-ray emitting galaxies that wait to meet us.
- Ever since 1929, when Edwin Hubble discovered that the Universe is expanding, it has been known that most other galaxies are moving away from us.
- Light from these galaxies is shifted to longer (and this means redder) wavelengths - in other words, it is red-shifted. Scientists have been trying to trace such red-shifted galaxies to understand the early Universe.
- Powerful relativistic jets, or sources of particles in the Universe traveling nearly at speed to light, are usually produced by Active galactic nuclei (AGN) powered by large black holes and hosted in a giant elliptical galaxy.
- However, detection of gamma-ray emission from NLS1 challenges the idea of how relativistic jets are formed because NLS1s are a unique class of AGN that are powered by black hole of low mass and hosted in spiral galaxy.
- As of today, gamma-ray emission has been detected in about a dozen NLS1 galaxies, which are a separate class of AGN identified four decades ago. All of them are at redshifts lesser than one, and no method was present till date to find NLS1 at **redshifts** larger than one.
- This discovery opens up a new way to find gamma-ray emitting NLS1 galaxies in the early Universe.

Gamma ray


AGNs, SNRs, GRBs...
black holes
Gamma rays
They point to their sources, but they can be absorbed and are created by multiple emission mechanisms.
γ
ν
p
Neutrinos
They are weak, neutral particles that point to their sources and carry information from deep within their origins.
Earth
air shower
Cosmic rays
They are charged particles and are deflected by magnetic fields.

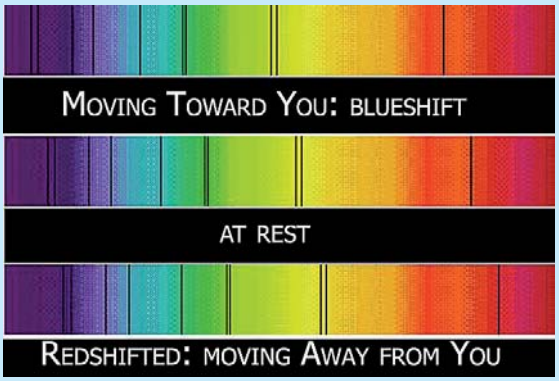
- A gamma ray, or gamma radiation, is a penetrating form of electromagnetic radiation arising from the radioactive decay of atomic nuclei.
- It consists of the shortest wavelength electromagnetic waves and so imparts the highest photon energy.
- Natural sources of gamma rays originating on Earth are mostly as a result of radioactive decay and secondary radiation from atmospheric interactions with cosmic ray particles.
- Gamma rays are emitted during nuclear fission in nuclear explosions.
- Gamma rays cause damage at a cellular level and are penetrating, causing diffuse damage throughout the body. However, they are less ionising than alpha or beta particles, which are less penetrating.

Redshift

- Redshift, displacement of the spectrum of an astronomical object toward longer (red) wavelengths. It is attributed to the Doppler effect, a change in wavelength that results when a given source of waves (e.g., light or radio waves) and an observer are in motion with respect to each other.
- Ever since 1929, when Edwin Hubble discovered that the Universe is expanding, we have known that most other galaxies are moving away from us. Light from these galaxies is shifted to longer (and this means redder) wavelengths - in other words, it is 'red-shifted'.

Blue shift

- Blue shift or blueshift, in astronomy, the systematic displacement of individual lines in the spectrum of a celestial object toward the blue, or shorter wavelength, end of the visible spectrum. The amount of displacement is a function of the object's relative velocity toward the observer.



13 National Policy for Rare Diseases, 2021

CONTEXT:

- Union Health Minister approves National Policy for Rare Diseases, 2021

ABOUT:

- The Rare Diseases Policy aims to lower the high cost of treatment for rare diseases with increased focus on indigenous research with the help of a National Consortium to be set up with Department of Health Research, Ministry of Health & Family Welfare as convenor.
- Increased focus of research and development and local production of medicines will lower the cost of treatment for rare diseases.

- The policy also envisage creation of a national hospital based registry of rare diseases so that adequate data is available for definition of rare diseases and for research and development related to rare diseases within the country.
- The Policy also focuses on early screening and prevention through primary and secondary health care infrastructure such as Health and Wellness Centres and District Early Intervention Centres (DEICs) and through counselling for the high-risk parents.
- Policy aims to strengthen tertiary health care facilities for prevention and treatment of rare diseases through designating 8 health facilities as Centre of Excellence and these CoEs will also be provided one-time financial support of up to Rs 5 crores for upgradation of diagnostics facilities.

Rare disease:

- A rare disease is any disease that affects a small percentage of the population. In some parts of the world, an orphan disease is a rare disease whose rarity means there is a lack of a market large enough to gain support and resources for discovering treatments for it, except by the government granting economically advantageous conditions to creating and selling such treatments. Orphan drugs are ones so created or sold.
- Most rare diseases are genetic and thus are present throughout the person's entire life, even if symptoms do not immediately appear.
- Many rare diseases appear early in life, and about 30% of children with rare diseases will die before reaching their fifth birthday.

14 World's highest Railway Bridge

CONTEXT:

- Railways complete the Arch closure of the iconic Chenab Bridge, World's highest Railway Bridge

ABOUT:

- Chenab Bridge, the world's highest railway bridge, part of the Udhampur-Srinagar-Baramulla rail link project (USBRL), set an important construction milestone with completion of the steel arch of the iconic Chenab Bridge. This was one of the most difficult part of the bridge over Chenab.
- This achievement is a major leap towards the completion of the 111 k.m. long winding stretch from Katra to Banihal.

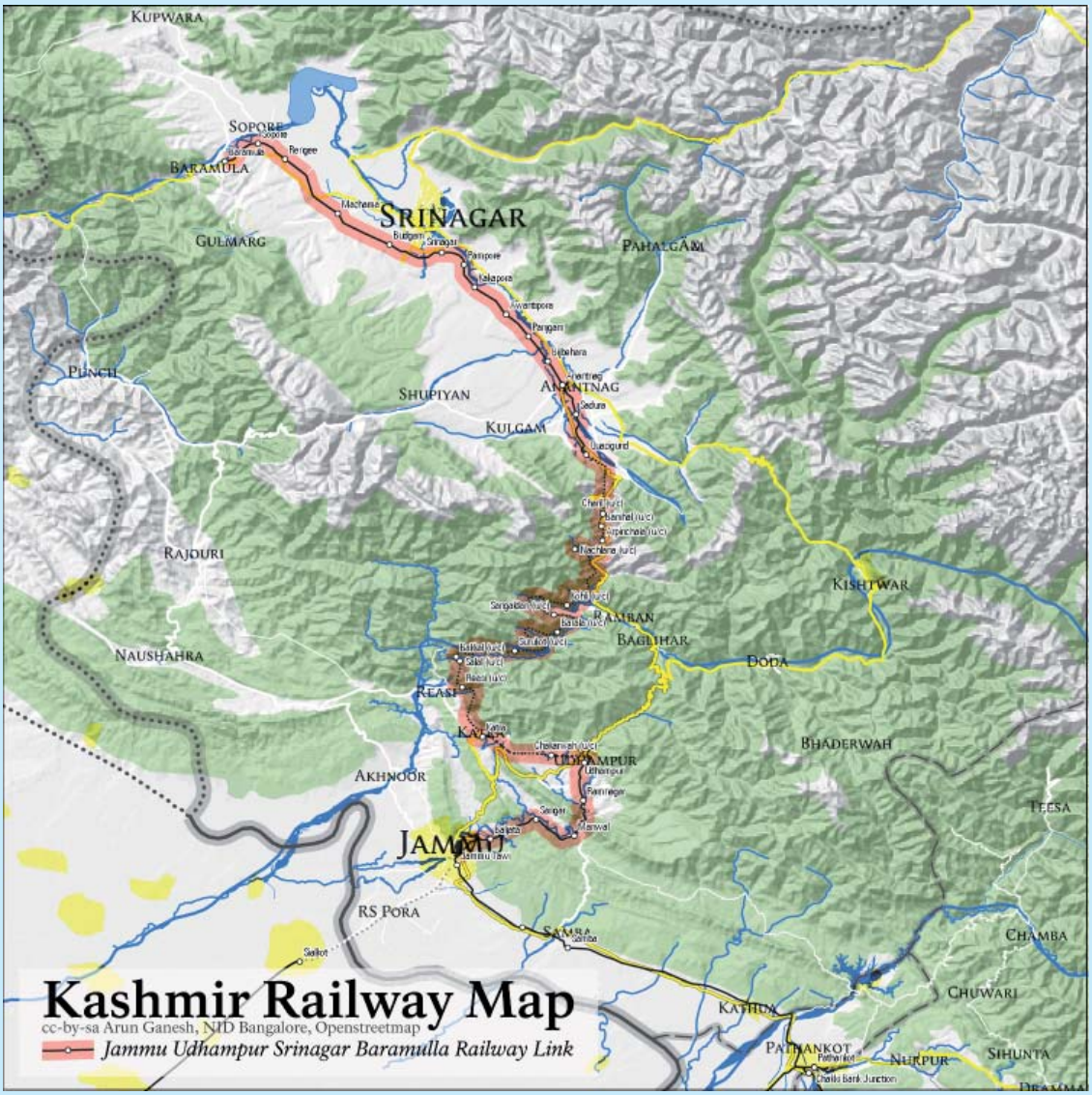
Salient Features of the Arch of the iconic Chenab Bridge:

- Indian Railways is constructing the iconic Arch Bridge on River Chenab as a part of the USBRL project to connect the Kashmir valley to the rest of the nation.
- This bridge is 1315m long.
- This is the highest Railway Bridge in the world being 359m above the river bed level.
- It will be 35 meters higher than the iconic Eiffel Tower in Paris (France).

Jammu–Baramulla line

- The Jammu–Baramulla line is a railway track being laid to connect the Kashmir Valley in the Indian union territory of Jammu and Kashmir with Jammu railway station and thence to the rest of the country.

- The 356 km railway track will start from Jammu and end at Baramulla.
- It comes under the jurisdiction of the Firozpur railway division of Indian Railways' Northern zone. The 359 m (1,178 ft) tall Chenab Bridge lies on this line, which once completed will be the tallest railway bridge in the world.



15 Doubling the income of farmers through aromatic plant cultivation

CONTEXT:

- Cultivation and processing of aromatic plants doubles incomes of farmers in Himachal

ABOUT:

- Farmers in the Chamba district of Himachal Pradesh, keen for new livelihood options to supplement their income from traditional crops like maize, paddy, and wheat, have found a new lease of life.

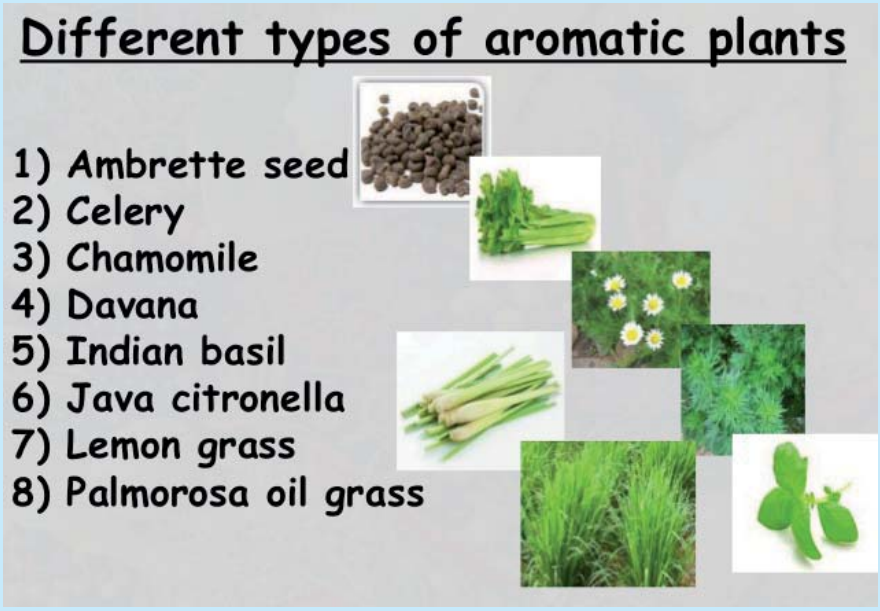
- Cultivation of aromatic plants has given them additional income. They have extracted essential oil from the improved variety of wild marigold (Tagetes minuta) that has been introduced, and the profit from wild marigold oil has doubled the income of farmers as compared to traditional maize, wheat and paddy crops.
- The extracted oil is being sold at Rs. 9500/kg and used in preparing perfumes and essences by pharmaceutical industries. The income of farmers which was around Rs. 40,000-50,000 per hectare from traditional crops have increased to about Rs. 1,00,000 per hectare by cultivation and extraction of wild marigold oil.

Mud Hive Technology

- In another initiative, farmers have improved pollination by adopting mud hive beekeeping technology which has enhanced apple production resulting in an increase in the income of apple growers 1.25 times.
- Mud Hive Technology is a combination of wall hive & wooden hive technology, with a habitat like wall hive. It has inbuilt provision for putting frames inside the mud hive and more favorable conditions, especially temperature for bees throughout the year as compared to wooden hives.
- The technology has brought about better colony growth & less swarming as compared to earlier used wooden boxes because of the favourable conditions they created.
- Introduction of indigenous bees, which can survive better in the apple growing areas, to replace the Italian bees through this technology has helped increase the average productivity of apple orchards by around 25 percent.

Aromatic plants:

- Aromatic plants are a special kind of plants used for their aroma and flavour. Many of them are also used for medicinal purposes.
- Aromatic plants are from a numerically large group of economically important plants. These are increasing demand for essential oils, aroma chemicals drugs and pharmaceuticals in the world market since two decades.
- Aromatic compounds are present in plants i.e. in root, wood, bark, foliage, flower, fruit, seed etc.



16 UN Food Systems Summit 2021

CONTEXT:

- India Holds National Dialogue on UN Food Systems Summit 2021.

ABOUT:

- The United Nations Secretary General has called for the first ever UN Food Systems Summit to be held in September 2021 to strategize the actions for positive change in Agri-food systems in the World to realize the vision of the 2030 Agenda for Sustainable Development.
- The Summit will focus on levers and pathways to shape food systems nationally and globally to accelerate progress in the SDGs.
- The Summit 2021 is planned to be essentially participatory and consultative and needs the game changing ideas from the experiences through the National, Sub-national (State) and independent consultation for the five Action Tracks related to safe and nutritious food, sustainable consumption patterns, nature-positive production, advance equitable livelihoods, and resilience to vulnerabilities, shocks and stress.
- The COVID-19 pandemic led vulnerability and challenges faced by the humanity in food and related system has further added to the need for reorienting our actions and strategies beyond specific cropping or farming systems to entire agri-food systems covering production, distribution and consumption.

17 Nanosniffer

CONTEXT:

- Recently, Union Education Minister launched NanoSniffer, a Microsensor based Explosive Trace Detector.

ABOUT:

- Given the constant threats, which our nation faces due to geo-political realities, explosives & contraband detection has become a norm at high security locations like airports, railways & Metro stations, hotels, malls, and other public places.
- Check points at such locations are incorporating advanced detection equipment for rapid scanning of people and baggage. Almost all these products for explosive detection are imported at a high cost leading to the loss of valuable foreign exchange by the country. NanoSniffer is a perfect substitute for such products.
- NanoSniffer is a 100% Made in India product in terms of research, development & manufacturing. The core technology of NanoSniffer is protected by patents in the U.S. & Europe.
- This affordable device will reduce our dependency on imported explosive trace detector devices.
- It will also encourage other institutions, startups and medium-scale industries to research & develop products indigenously.

NanoSniffer:

- NanoSniffer provides trace detection of nano-gram quantity of explosives & delivers result in seconds.
- It can accurately detect a wide range of military, commercial and homemade explosives threats. Further analysis of the algorithms also helps in categorization of explosives into the appropriate class. With local manufacturing, including its MEMS sensor, it will save a lot of import cost for the country.

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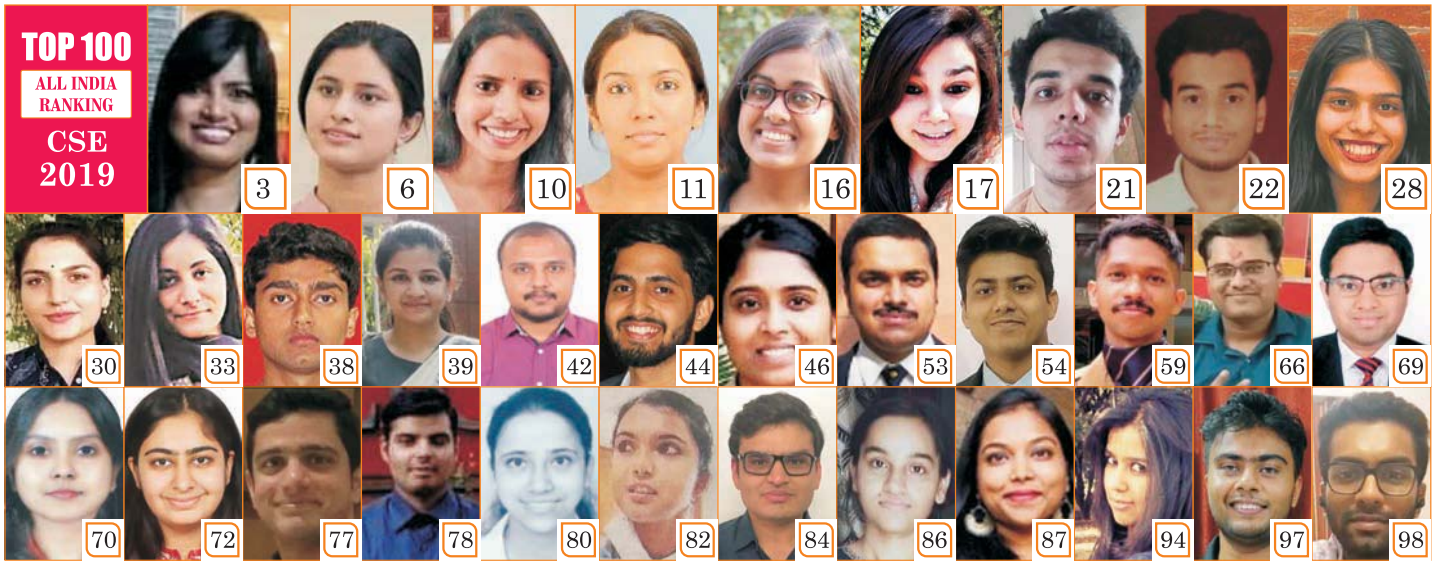

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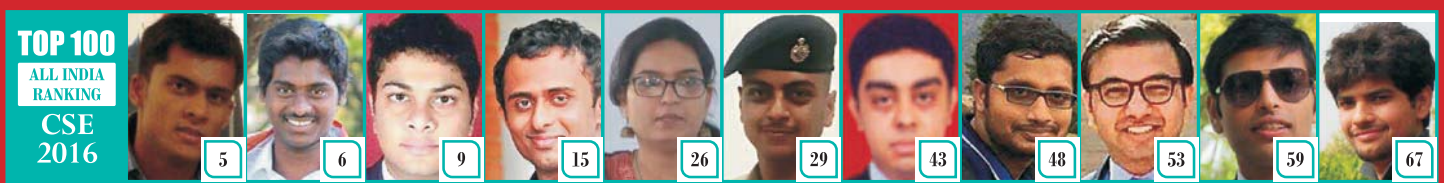

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